Environmental Science

ETHER MOVEMENT THROUGH SOIL MEDIA.

Daniel L. Tener

Alfred R. Conklin*

Wilmington College
251 Ludovic Street
Wilmington, Ohio 45177

MTBE contaminates water supplies throughout the United States. Do ethers flow directly through soil or become trapped by soil components? Our hypothesis is that ethers are sorbed on the soil components until they become saturated. Additional ethers then leach out of soil. Soil columns were loaded with 7.5 mL of aqueous ether solution and leached. Four mL sub-samples of leachate were passed through an Alltech extract-clean C18 column. These columns were subsequently eluted with pentane and the extract analyzed for ethers using gas chromatography. The amount of ethers in each sub-sample was determined and plotted against milliliters of elutant. Low molecular weight ethers eluted immediately followed by those of higher molecular weight. There appear to be little or no interaction of low molecular weight ethers with soil. However, there appear to be complex interactions or retention patterns between high molecular weight ethers and soil.